NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

CROSS WIND RIDGES

(Acre)

CODE 589A

DEFINITION

Ridges formed by tillage or planting and aligned across the prevailing wind erosion direction.

PURPOSE

This practice may be applied as part of a conservation management system to reduce soil erosion from wind.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to cropland, or other land where crops are grown.

It is best adapted on soils which are stable enough to sustain effective ridges, such as clayey, silty, and sandy loam soils.

It is not well adapted on unstable soils such as sands, loamy sands, and certain organic soils.

CRITERIA

The ridge height, spacing, and direction will be determined using the current approved wind erosion prediction technology to reduce soil erosion by wind to the soil loss tolerance (T) or other planned soil loss objective.

Acceptable combinations of ridge height, spacing, and direction are those having Ridge Roughness K values equal to 0.8 or less during those periods when wind erosion is expected to occur. K values are displayed in the National Agronomy Manual, Exhibit 502.62(a).

CONSIDERATIONS

Transport of wind-borne sediment and sediment-borne contaminants offsite can be reduced by this practice when used in a conservation management system.

Adjacent fields, roads, or field corners may need treatment to stop saltation of soil particles onto fields protected by cross wind ridges. Effective treatment may include mulching, permanent cover, windbreaks, or herbaceous wind barriers.

The effect of cross wind ridges is generally temporary. Ridges may not last throughout the critical wind erosion period. Additional treatment measures such as cover crops, changes in crop rotations, or cross wind trap strips should be considered.

Cross wind ridges are most effective when established across the prevailing wind direction during the most critical wind erosion period. Cross wind ridges in coarse textured soils such as very fine sandy loams, fine sandy loams, and sandy soils should be formed when soil is moist to improve effectiveness. Ridges on these soils will deteriorate quickly and shorten the protection period.

Where water erosion along the furrows formed by ridges is a concern, farming across the slope according to Conservation Practice Standard 330, Contour Farming, can reduce the hazard.

PLANS AND SPECIFICATIONS

Specifications for establishment and maintenance of this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and Operation and Maintenance described in this standard.

Specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Ridges shall be established or reestablished by the use of proper tillage and planting equipment such as chisel plows, drills with hoe openers, or other similar implements which form effective ridges. Narrow sweeps or rotary hoes may reduce potential soil erosion by wind on loamy or fine textured soils. Ridging the surface with a lister or wide shovels will be more effective on sandy soils.

After establishment, ridges shall be maintained through those periods when wind erosion is expected to occur, or until growing crops provide enough cover to protect the soil from wind erosion.

If ridges deteriorate and become ineffective due to weathering or erosion, they shall be reestablished unless doing so would damage a growing crop. If ridges become ineffective during a wind erosion event and other implemented practices fail to control saltating soil particles, the ridges should be reestablished immediately. Ridging should be reestablished perpendicular to the soil movement, beginning upwind of the point of initiation working through the area of abrasion until soil movement ceases.